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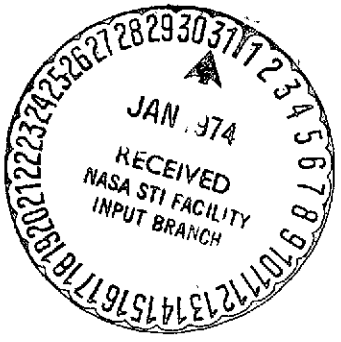
STUDY OF VENOUS TONUS IN THE FOREARM DURING SIMULATED WEIGHTLESSNESS

D. Kaiser and O. H. Gauer

Translation of "Untersuchungen über den Venentonus am Unterarm bei simulierter Schwerelosigkeit," Pflugers Archiv (European Journal of Physiology), Vol. 289, 1966, pp. R76-77



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16. Abstract

A reduction in venous tonus, assumed to be partly a function of temperature, is observed directly after immersion in a thermally neutral bath. Several hours of immersion causes further relaxation of veins.

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After several hours of simulated weightlessness (immersion /R76* in a thermally neutral bath), a tendency toward collapse occurs under orthostatic loads (tilting table). In earlier experiments, it had been possible to show that under these conditions -- after 8 hours of immersion -- plasma volume is reduced by 14% [1]. A study was now made as to whether a reflex slackening of the veins also favors the tendency toward collapse. Prior to immersion -- and at regular intervals after immersion -- circumferential pressure diagrams were taken with the aid of a venous inflatable cuff, a Whitney gauge [2] and Statham strain gauge manometer about the upper arm. A reduction in venous tonus, probably a function, in part, of temperature, occurred immediately after immersion. Several hours of immersion also usually causes further relaxation of the veins.

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* Numbers in the margin indicate pagination in the foreign text.

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